



A review on the generation, determination and mitigation of Urban Heat Island

Author(s): Rizwan AM, Dennis LYC, Liu C
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Abstract:

Urban Heat Island (UHI) is considered as one of the major problems in the 21st century posed to human beings as a result of urbanization and industrialization of human civilization. The large amount of heat generated from urban structures, as they consume and re-radiate solar radiations, and from the anthropogenic heat sources are the main causes of UHI. The two heat sources increase the temperatures of an urban area as compared to its surroundings, which is known as Urban Heat Island Intensity (UHII). The problem is even worse in cities or metropolises with large population and extensive economic activities. The estimated three billion people living in the urban areas in the world are directly exposed to the problem, which will be increased significantly in the near future. Due to the severity of the problem, vast research effort has been dedicated and a wide range of literature is available for the subject. The literature available in this area includes the latest research approaches, concepts, methodologies, latest investigation tools and mitigation measures. This study was carried out to review and summarize this research area through an investigation of the most important feature of UHI. It was concluded that the heat re-radiated by the urban structures plays the most important role which should be investigated in details to study urban heating especially the UHI. It was also concluded that the future research should be focused on design and planning parameters for reducing the effects of urban heat island and ultimately living in a better environment. © 2008 The Research Centre for Eco-Environmental Sciences, Chinese Academy of Sciences.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Temperature

Temperature: Extreme Heat

Geographic Feature:

resource focuses on specific type of geography

Urban

Geographic Location:

resource focuses on specific location

Climate Change and Human Health Literature Portal

Global or Unspecified

Health Impact:

specification of health effect or disease related to climate change exposure

Health Outcome Unspecified

Mitigation/Adaptation:

mitigation or adaptation strategy is a focus of resource

Mitigation

Resource Type:

format or standard characteristic of resource

Review

Timescale:

time period studied

Time Scale Unspecified